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## **BIG BANG VS GRADUALISM: WHY WERE ECONOMISTS TOO OPTIMISTIC ABOUT THE TRANSFORMATION IN EASTERN EUROPE AND USSR AND WHY IS THE CHINESE EXAMPLE AMBIGUOUS?**

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## Summary

1. Most Western economists (the present writer **included**) were too optimistic about the big-bang transformation in Eastern Europe and the former Soviet Union around the time of its commencement around 1989-1992. Most expected only moderate falls of output and relatively quick and strong recovery and growth. The **actual** falls have been much **larger** and with the exception of Poland, the recovery has yet to take place.
2. Many economists had not taken **sufficient** account of **relevant** institutional factors. **The importance of institutional** factors have been emphasised by a number of researchers (e.g. Clague 1992, **Clague & Rausser** 1992, **Elster** 1994, **Murrell** 1992, Olson 1992, Shieifer 1994, Williamson 1994).
3. A factor which may partly explain why economists were too optimistic concerns the predominance reliance on the model of a perfectly competitive market economy and **the point that such an economy adjusts much better to shocks than non-perfectly competitive (including monopolistic competitive, oligopolistic, and monopolistic) market economies and non-market or semi-market economies in the real world, including the Eastern European economies and the former Soviet Union.**
4. Using simple graphical illustration (supported by more rigorous mathematical analysis in an appendix) of a representative firm **but** taking account of its interactions with other firms and macroeconomic factors, it is shown that, with perfect competition, **the** economy possesses a unique high equilibrium and is immune from aggregate demand and inter-sectoral shocks. With non-perfect competition, such immunity may no longer apply.
5. Vulnerability to shocks is increased if some firms maximize revenue rather than profit, adopt average-cost pricing, or are former Soviet-type enterprises.
6. In contrast to the USSR and Eastern European economies, China has enjoyed sustained and higher (than pre-reform) economic growth, low inflation (single digit **annual** rates except 1988, 1989 and currently), galloping exports, and improved standard of living.
7. The support for **gradualism** offered by the Chinese experience has to be subject to a number of **qualifications**:
  - (a) China underwent a big bang in its **rural** sector which proved to be very successful.
  - (b) The sector of state-owned enterprises where gradualism in reform has prevailed is **also** the **least** satisfactory sector in the economy.
  - (c) The USSR and Eastern Europe did not undertake the big-bang approach as the **first** option to reform. Rather, it is after their repeated failure in the gradual, piece-meal approaches and the resulting **political** upheaval that the big-bang approach was undertaken.
  - (d) China enjoyed many favourable factors not available to the USSR and **Eastern**

Europe.

- (e) While still growing rapidly, **China** is not currently without some major problems.

8. The advantages of China **includes**:

- (a) **political** stability
- (b) favourable initial economic conditions including low inflation and no foreign debt
- (c) shorter period under communism than USSR (this also makes Olson's institutional theory of sectional **coalitions** relevant)
- (d) lower stages of development, **with** a large agricultural sector which is easier to reform (the success in **agricultural** reform then generates political dynamics **favourable** to further reforms)
- (e) more **decentralised**
- (f) **high** saving propensity and entrepreneurial ability of the populace
- (g) some advantages of Confucianism
- (h) the role of Hong Kong, Taiwan, and overseas Chinese
- (i) the backlash of the three disasters of **Mao**

9. **The vulnerability to** shocks of a modern economy suggests caution in adopting the big bang strategy. On the other hand, China's advantages suggest that **similar** reform strategy may not work in Eastern Europe and the former USSR. More studies are needed.

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WHY WERE ECONOMISTS TOO OPTIMISTIC ABOUT  
THE TRANSFORMATION IN EASTERN EUROPE AND USSR  
AND WHY IS THE CHINESE EXAMPLE AMBIGUOUS?\***

*- Report of a Preliminary IRIS Study*

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## 1. Introduction

It is now rather **clear** that most Western economists (the present **writer included**) were too optimistic about the big-bang transformation in **Eastern** Europe and the former Soviet Union (EEFSU hereafter) around the time of its commencement around 1989-1992. Most expected only moderate falls of output and **relatively** quick and strong recovery and growth. **The** actual falls have been much larger and the recovery has yet to take place, with the moderate exception of Poland. It seems that many economists had not taken sufficient account of relevant institutional factors. Just as the fish takes water **for** granted, we Western economists take many institutional factors important for the functioning of a market economy for granted. The importance of **institutional** factors have been emphasised by a number of researchers (e.g. **Clague** 1992, Clague & Rausser 1992, **Elster** 1994, **Murrell** 1992, Olson 1992, **Shleifer** 1994, Williamson 1994). In the next section, I discuss a factor which may **partly explain** why economists were too optimistic. This concerns the predominant **reliance** on the model of a **perfectly** competitive market economy and the point that such an economy adjusts much better to shocks than non-perfectly competitive (including **monopolistic** competitive, **oligopolistic**, and monopolistic) market economies and non-market or semi-market economies in the real world, including EEFSU. Taking the higher adjustment costs for such real-world economies into account tends to favour a **gradual** transformation process. The economic success so far of China may **also** suggest that the Chinese way of gradual transformation ("crossing the river by groping for the stones") may be **preferable**. In Section 3, it is argued that the Chinese lesson is not so clear cut as there are a number of significant differences between China and EEFSU and as **there** are some **unsolved** problems in China.

## 2. **Why were Economists too Optimistic? The Role of the Perfectly Competitive Model**

### 2.1 **The presumption of over-optimism**

A cursory reading of the literature on transition **reveals** that most economists now agree or admit that most Western economists were too optimistic about the prospect of the transition in EEFSU. It is **thus** nor necessary to defend this presumption. Nevertheless, readers may just **look** at Tables 1-4 to see that few, if any, Western economists expected a few years ago so drastic a decline in the economic conditions of the transitional countries, with real GNP collapsing, inflation soaring, unemployment increasing, and government budgets in big deficit.

### 2.3 **Some qualifications**

It is true that the available figures probably overstate the actual collapse in output since the nascent private sector probably has its output understated. Also, some of the reductions in output may be efficient. These include many military outputs and those sectors that have negative values added. Nevertheless, no one doubts the **reality** of very significant reductions in output.

It may also be noted that the affirmation and an explanation of the alleged overoptimism do not necessarily mean that the big bang strategy is wrong, though they are not unrelated either. The title of this paper is admittedly over-presumptuous. The issue of big bang versus gradualism involves many aspects not discussed here. For example, one may argue (e.g. see Sachs & Woo 1993) that most, if not all, countries in EEFSU had tried gradualism and failed. One may also argue that the country (Poland, see Table 1) which has recovered earliest and best from the collapse in output is in fact the one that followed closest

to the big bang strategy. Moreover, ***“output declines have been severe even in the slowly reforming (or non-reforming) economies such as Ukraine and Belarus”*** (Clague 1993, p. 291). Also, ***“radical stabilization is not associated with lower measured output over a two to three year period. Indeed, the association is positive . . . the largest cumulative contraction is in Romania, the least successful stabilizer, and the smallest is in Poland”*** (Balcerowicz & Gelb, 1994, p. 28).

Table 1: Real GNP (% Growth)

	1989	1990	1991	1992	1993*	1994*
Russia	<b>3.0</b>	<b>-2.1</b>	-12.9	-18.5	-11.5	<b>-9.9</b>
<b>Hungary</b>	<b>-0.2</b>	-3.5	-11.9	-4.5	-1.6	<b>-1.0</b>
Romania	-4.3	-7.4	-15.1	-13.5	--	--
Poland	0.2	-11.6	-7.6	1.5	4.0	<b>4.5</b>
<b>Czech</b>	<b>0.7</b>	<b>-1.1</b>	<b>-19.0</b>	-7.1	<b>0.5</b>	<b>2.5</b>
Slovakia	0.7	-1.1	-19.5	-7.1	-3.6'	<b>-2.0</b>
<b>Bulgaria</b>	-0.5	-9.1	-11.7	-5.6	-3.5	<b>0.5</b>
<b>Ukraine</b>	4.1	-3.6	-11.9	-7.0	-17.0	<b>-18.0</b>
Moldova	8.8	-1.5	-18.0	-21.3	-15.0	-3.0
<b>Belarus</b>	7.9	-3.2	-1.9	-11.0	-11.7	-9.4
Estonia	3.3	-8.1	-11.9	-19.3	-3.5	6.4
Latvia	5.7	-3.4	-8.3	-33.8	-10.1'	5.0
<b>Lithuania</b>	1.1	-6.9	-13.1	-37.7	-16.2	<b>4.7</b>
Georgian Rep	2.6	-11.1	-20.6	-45.6	-30.0	-5.0
Armenia	8.0	-7.2	-11.8	-52.3	-28.0	<b>-9.8</b>
Azerbaijan	<b>-6.3</b>	<b>-11.7</b>	-0.7	-26.8	-14.4	--
<b>Kazakhstan</b>	--	-0.8	-13.0	-14.0	-10.0	-3.0
<b>Kyrgyz Rep</b>	3.8	3.2	-5.0	-19.1	-16.4'	-5.2
Tajikistan	-2.9	-1.6	-8.7	-30.0	-30.0	-15.0
<b>Turkmenistan</b>	<b>-7.0</b>	<b>1.8</b>	<b>-4.7</b>	<b>-5.3</b>	<b>-8.5</b>	<b>-12.3</b>
<b>Uzbekistan</b>	--	--	-0.9	-9.6	-10.0	--
Mongolia	4.2	-2.0	-9.9	-7.6	-1.3	<b>2.5</b>
Albania	9.8	-10.0	-27.7	-9.7	0.11	<b>8.0</b>
Vietnam	7.8	4.9	6.0	8.3	8.0	--
<b>Former Soviet Union &amp; Baltic Counties</b>				-18.2	-11.9	<b>-9.8</b>
Counties in Transition				-15.5	-8.8	<b>-6.1</b>

Sources: IMF

\* IMF forecasts

' The actual figures in the IMF survey, September 12, 1994, are 3.8 (Poland), -4.1 (Slovakia; preliminary), -12 (Latvia), and -16.0 (Kyrgyz).



**Table 2: Inflation (CPI) %**

	1989	1990	1991	1992	<b>1993*</b>	1994'
<b>Russia</b>	<b>4</b>	<b>5.0</b>	<b>92.7</b>	<b>1,353.0</b>	<b>895.9</b>	<b>600</b>
<b>Hungary</b>	17.0	28.9	36.4	23.0	22.5	21.0
<b>Romania</b>	<b>0.9</b>	<b>4.7</b>	161.1	210.3	<b>256.0</b>	
<b>Poland</b>	251.0	585.8	70.3	43.0	35.3	30.0
<b>Czech</b>	1.4	10.0	56.6	12.7	20.8	12.0
<b>Slovakia</b>	1.4	10.0	51.2	111.5	23.2	20.0
Bulgaria	6.4	23.9	333.5	82.0	72.8	
<b>Ukraine</b>	--		91.2	<b>1,445.3</b>	<b>4,927.9</b>	7,000.0
Moldova	--	4.2	162.0	<b>1,276.0</b>	<b>1,340.0</b>	
<b>Belarus</b>	--	--	83.5	969.0	<b>1,188.0</b>	--
<b>Estonia</b>	5.5	17.2	210.6	<b>1,069.0</b>	89.0	
<b>Latvia</b>	4.7	10.5	124.4	951.2	109.0	
<b>Lithuania</b>	2.1	a.4	224.7	<b>1,020.3</b>	410.4	
Georgian Rep		4.8	78.5	887.5	<b>1,480.0</b>	
<b>Armenia</b>	--	10.3	100.0	790.0	2,100.0	
Azerbaijan		7.8	105.6	611.3	797.5	
<b>Kazakhstan</b>	--	4.2	147.0	<b>2,568.0</b>	<b>2,146.9</b>	--
<b>Kyrgyz Rep</b>		3.0	85.0	854.6	<b>1,208.7</b>	--
Tajikistan	--	<b>4.0</b>	111.6	<b>1,156.7</b>	<b>1,869.7</b>	
<b>Turkmenistan</b>	2.1	4.6	102.5	492.9	<b>1,860.0</b>	--
<b>Uzbekistan</b>	2.1	7.3	105.0	528.0	761.0	
<b>Mongolia</b>	--		208.6	321.0	183.0	
Albania	--		35.5	225.9	85.0	--
<b>Vietnam</b>	35.0	<b>67.0</b>	<b>68.1</b>	<b>17.5</b>	<b>13</b>	--
Former Soviet Union and Baltic Countries	--	--		<b>1,292.4</b>	<b>1,226.3</b>	457.4
<b>Countries in Transition</b>	--	--	--	766.9	687.2	290.2

\* IMF forecast; 'EIU forecasts  
Sources: IMF, EIU

**Table 3: Unemployment (%)**

	1989	1990	1991	1992	1993
Russia	--	--	--	--	12.0
<b>Hungary</b>	7.4	8.5	8.5	12.3	<b>12.1</b>
Poland	--	3.5	9.7	13.3	<b>14.9</b>
Czech				1.7	<b>3.0</b>
Slovakia	1.0	6.6	5.1	13	<b>17</b>
<b>Ukraine</b>	--	--	--	<b>0.3</b>	<b>0.3</b>
Moldova	--	--	0.1	0.5	<b>0.5</b>
Estonia	--	--	0.1	1 . 9	2.6
Latvia	--	--	0.1	2.1	<b>4.8</b>
Lithuania	--	--	0.3	1.0	1.8
<b>Kazakhstan</b>	--	--	0.1	0.5	<b>0.5</b>
<b>Bulgaria</b>	--	<b>1.7</b>	<b>11.5</b>	15.6	<b>16.2</b>
Romania	--	--	<b>3.0</b>	8.4	
<b>Albania</b>	7.3	9.5	9.1	--	--

Sources: World Bank, World Table 1992

Year Book of *Labour* Statistics, 1993

**Table 4: Budget Balances (in % of GNP)**

	1991	1992	1993*
Albania	-43.7	-21.8	-15.5
Bulgaria	-8.7	-14.0	-13.5
<b>Czech</b>	--	--	0.3
Slovakia	--	--	-7.9
<b>Hungary</b>	-2.5	-7.5	-5.8
Poland	-5.6	-6.8	-4.1
Romania	0.6	-5.5	-4.6
<b>Armenia</b>	-1.9	-34.8	-52.0
<b>Azerbaijan</b>	2.6	-26.8	-14.4
<b>Belarus</b>	3.6	-5.7	-11.8
Estonia	4.6	0.6	0.2
Georgian Rep	-3.5	-35.1	-40.0
<b>Kazakhstan</b>	-7.9	-7.3	-2.9
<b>Kyrgyz Rep<sup>1</sup></b>	4.5	-14.8	-8.2
<b>Latvia</b>	6.3	-0.9	0.9
<b>Lithuania</b>	2.8	0.6	-0.2
Moldova	--	-26.0	-6.1
<b>Russia<sup>2</sup></b>	-16.0	-18.8	-9.3
Tajikistau	--	-37.0	-37.0
Turkmenistan'	3.5	14.1	-7.0
<b>Ukraine<sup>1</sup></b>	-15.0	-28.7	-15.0
<b>Uzbekistan</b>	-4.8	-13.0	-15.7
Mongolia	-10.5	-12.7	-17.0

\* IMF forecasts

Sources: IMF, *World Economic Outlook*, May 1994

<sup>1</sup> Excludes extrabudgetary funds

<sup>2</sup> Includes unbudgeted import subsidies

## 23 A **partial** explanation

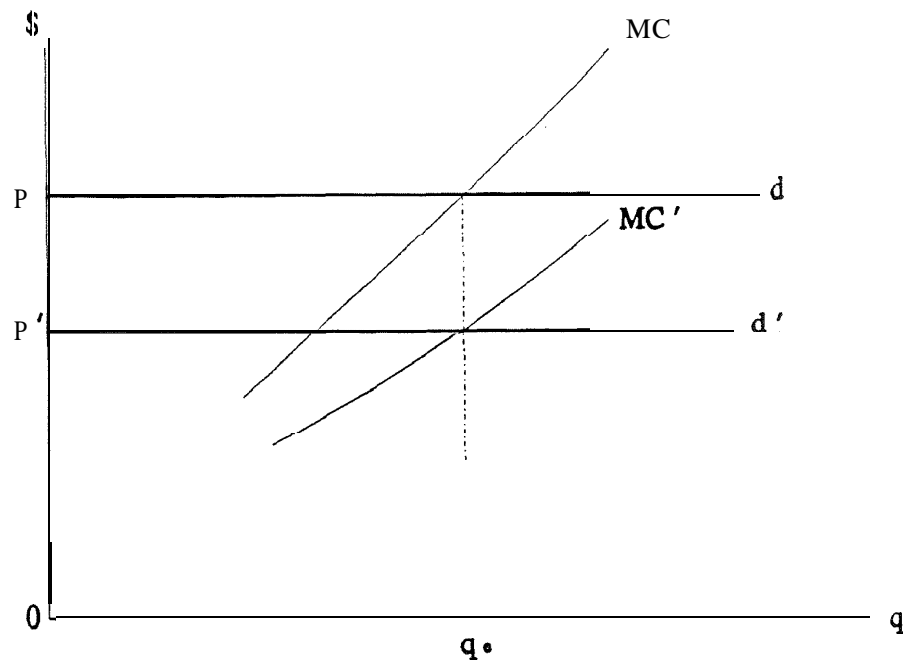
While economists are aware that real **economies** are not perfectly competitive, and that institutions in the centrally planned economies differ from those in our market economies, they still basically have the model of perfect competition in mind, especially when they are thinking about issues of the whole economy and those of efficiency, except those on industrial **organisation**. Except in this **last** topic, economists are trained almost **exclusively** with the model of perfect competition. A general equilibrium model with imperfect competition is difficult to manage. Until fairly recently, macroeconomic analyses are explicitly or implicitly based on perfect competition. (Elsewhere, I have developed a method of -micro-macro analysis that provides a simple imperfect competition foundation for macroeconomics; see Ng 1977, 1980, 1982, 1986, 1992.) It is true that Keynesian economics recognizes the impacts of aggregate demand on **real** output. However, such possibilities are based on price and wage rigidities. As the big bang transition entails price and wage flexibility, the Keynesian consideration is also naturally de-emphasised. With the model of perfect competition in mind, it is natural that economists' assessment of the feasibility of the big bang strategy of the **transformation** was much more optimistic than that borne out by the real evolution of events, for the following reason.

With a model of perfect competition in mind, one is more likely to think that an economy can adjust to big changes quickly without suffering too much losses. An economy is more likely to possess a unique high-level equilibrium and to be more immune from big damages of aggregate-demand, inter-sectoral, and other shocks. As long as real costs (mainly wages in a largely closed economy) do not increase, the high-level equilibrium can easily be maintained despite the occurrence of big shocks. In particular, a reduction in aggregate demand (due, e.g., to a fall in money supply relative to the price level or to inter-industry

linkages) **will** not cause a **reduction in** output. In contrast, with a model of **non-perfect** competition, it can be shown that the economy **is** more likely to possess a continuum of real equilibria even under conditions that ensure a unique equilibrium under perfect competition. Starting from a high-level equilibrium, the occurrence of big shocks may knock the economy into a low-level equilibrium or even into a cumulative collapse.

Consider first the case of perfect competition **illustrated** in Figure 1 for the representative **firm**. Ignoring time lags, money illusion and other frictions, we have a **unique** equilibrium, at least given the determinacy at the **firm** level in the short run (with a given number of **firms**). Profit maximisation requires the equilibrium output being at the point where MC cuts the price line. Given the cost conditions, the equilibrium output can change only if the price changes. But with the full response of costs to prices (no money illusion, etc.), the MC curve responds by the full extent as in the price line, leaving the equilibrium output unchanged. Provided wages do not increase faster or decrease slower than prices, any shock can only reduce output by increasing the **real** costs of production by reducing efficiency and productivities. There are no additional macro and linkage effects that could cause further output collapses.

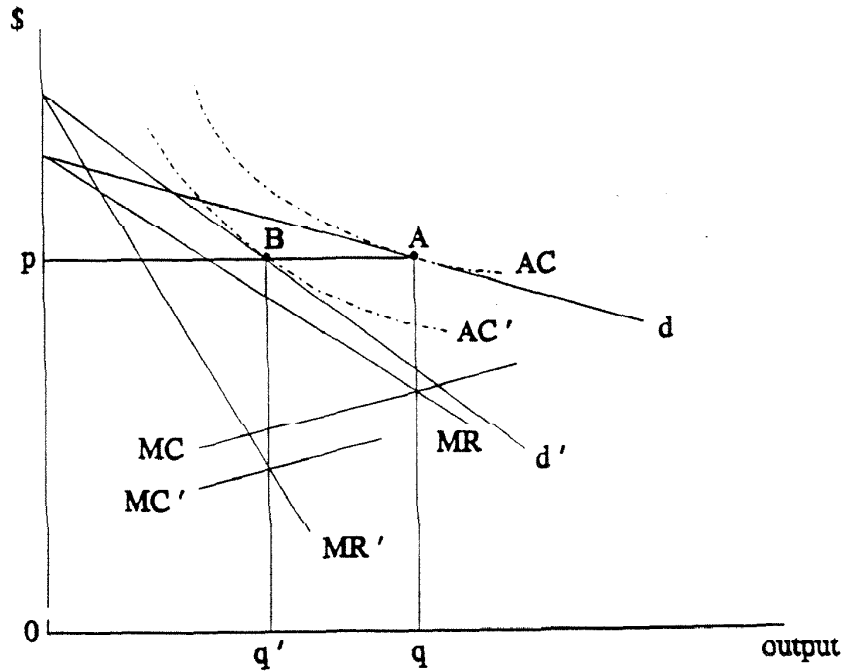
Now consider the contrasting case of non-perfect competition illustrated in Figure 2. (Linearity in the demand and cost curves is not necessary for our argument. The general case is shown rigorously in a simplified micro-macro general-equilibrium analysis provided in Appendix A). The representative firm is initially at an equilibrium point A where  $MC = MR$ . (If we allow for the long-run adjustment of entry/exit, we could require the tangency of AC to the demand curve d.) A shock in the form of a reduction in **nominal** aggregate demand (or in a dynamic setting, an increase in nominal aggregate demand by proportionately less than



**Figure 1**

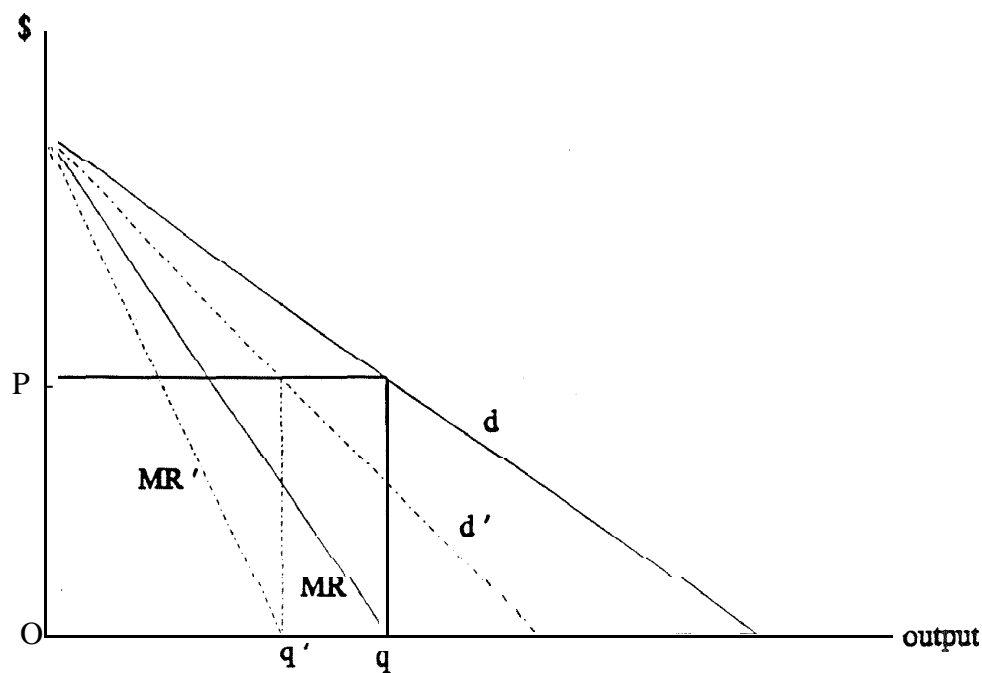
the increase in the general price level) shifts the demand curve to  $d'$  (which may become **less** elastic at a given price level, especially if the exit of firms is considered, since a smaller number of firms decreases the degree of competition. Though classified as a long-run effect, this adjustment may take place immediately by reducing entries and increasing exits in the real economy where entries and exits take place daily.) Then, even if wage-rates and costs are reduced with the reduction of aggregate output and employment (shifting  $MC$  **downward** to  $MC'$ ), we could still have a new equilibrium at a lower output with no reduction in price. (If the price **level** is reduced, we have to include the influence of this on the demand **and cost** curves. A more complete **analysis**, available in Ng 1982, 1986, shows that a unique equilibrium may then apply. If the price **level** increases, we **will** have cumulative collapses in output.) In Olson (1991), an important point is raised that we have to "**explain** how anyone gained from behaving in ways which caused depressions and **involuntary** unemployment" (p.

unemployment" (p. 45). In our analysis, this is partly explained by union's utility maximization and partly by the existence of **interfirm** macroeconomic externality.



**Figure 2**

The decrease (relative to the price level) in nominal aggregate demand may be due to a decrease (relative to the price level) in money supply and/or to a decrease in real aggregate demand related to some initial shocks and adjustments related to the transformation, or to some other factors. In any case, the decrease in aggregate demand may cause a decrease in real output in a full market economy with non-perfect competition. It is true that, in EEFSU, enterprises have different objectives and constraints from those of firms in the West and hence may not be **modelled** exactly like profit-maximizers. However, it can be argued that, as far as the relation between aggregate demand reduction and collapses in output is concerned, the economies of EEFSU are **like** that (or more so) of a non-perfectly competitive model than one of perfect competition.



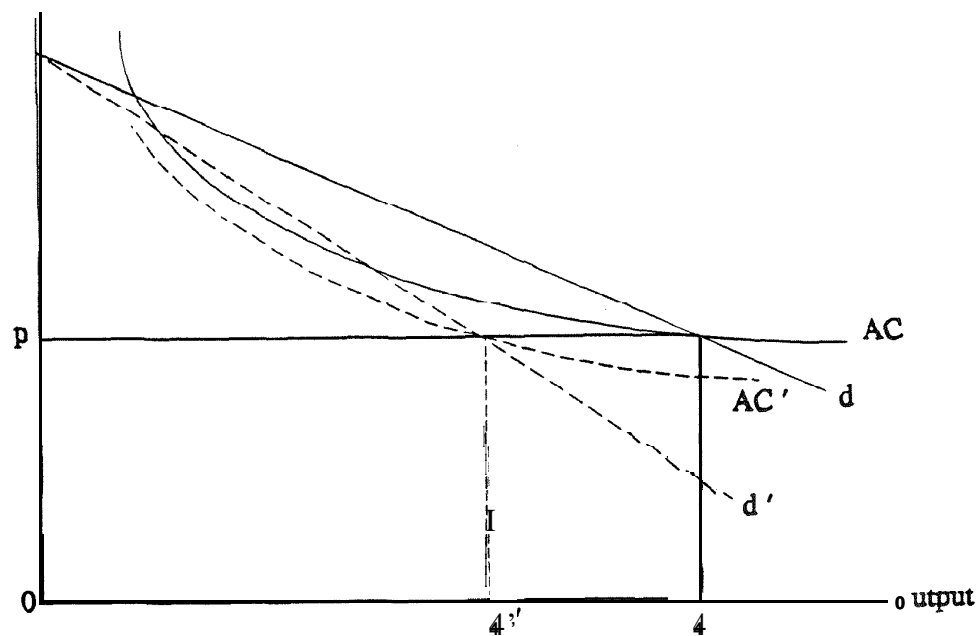
**Figure 3**

First, consider the case where the market **principles** works between enterprises but enterprises maximises revenue instead of profits. (Though economies of EEFSU were not and are not characterised by a pure model of this form, some elements apply. Some business firms in the West are **also** characterised by this model to some extent.) The representative firm then produces at **a point where total revenue is maximised or where MR is zero**. As illustrated in Figure 3, shocks that **result** in decreases in aggregate demand which shift the demand curve **leftward isoelastically** cause a decrease in real output by the same proportion as **the** decrease in aggregate demand. (The **shift** in demand may not be isoelastic. **However**, given the number of firms, the change in elasticity can go either way. If some firms exit as aggregate demand declines, the demand curve becomes less elastic, making the decrease in output proportionately more than the decrease in aggregate demand, as the increase in output per firm ignoring the change in demand elasticity is exactly offset by the decrease in the



number of firms. See Ng 1986, Chs. 4, 5, 6 for a more complete analysis.) Thus, in this case, we see that a reduction in aggregate **demand** leads to a proportionate **fall** in **real** output without having to be subject to certain conditions regarding the cost conditions as in the case of profit maximization.

The case of revenue maximization subject to a profit constraint may be more relevant. If ~~we~~ include the constrained amount of (average) profit into ~~the average~~ cost and **recognise** that profit in excess of the constrained amount can be used as promotional expenses to push out the demand curve (in order to increase revenue), the equilibrium output is at a point where the (constrained) **profit-inclusive** average cost curve **cuts** the demand curve, as illustrated in Figure 4.



**Figure 4**

In much modern industrial production, this is likely to be taking place where the AC

curve is **still** failing. At least, it is more likely for the AC curve to be failing than for the MC curve to be failing at the equilibrium output level. Then, as the demand curve shifts **leftward** with the decrease in aggregate demand, the equilibrium output may fall with no decrease in price, even if the AC curve falls with the fall in aggregate output (through, e.g., lower **real** wages). If the AC curve does not **fall** or does not fall by as much as illustrated in Figure 4, the equilibrium price **will** in fact increase. **This** will cause output to decrease more as the demand curve faced by the representative **firm** will shift vertically upward with an **increase** in the price **level**.

The case where the enterprise adopts AC pricing or the case where the enterprise minimises price or maximizes consumer surplus subject to a minimum profit (which may be zero) constraint may be **analysed** exactly as that of constrained revenue maximization, i.e. with Figure 4, since the equilibrium output is also determined by the point where the AC curve cuts the demand curve from below. Thus, in **all** these cases, we see that the potential for aggregate demand shocks (even if only nominal) to affect **real** output is even more important than the case of profit-maximizing firms. However, state enterprises in **EEFSU** are not accurately **modelled** either as revenue maximisers **or** average-cost pricers though such elements are present. **Even now, these** state enterprises still possess important elements of the Stalinist model where enterprises are instructed to **fulfil** centrally planned targets and have no power to change the centrally determined prices. Nevertheless, these inflexibilities make the economies of EEFSU even more vulnerable to the linkages effect, as argued **below**.

As an enterprise **drastically** reduces output or ceases production altogether (due, for **example**, to the withdrawal of government subsidies in a bag bang transformation), it reduces its demand for raw materials, imposing a backward linkage effect on enterprises that supply

its raw **materials** and a forward linkage effect on enterprises that use its products as inputs. It may be thought that at least the forward linkage should not be a problem. If other enterprises still want to use its products as inputs, why should it cease production? This reasoning is correct if applied to a perfectly competitive economy. The removal of a **subsidy** may increase the price. But buyers willing to pay the higher price will still be able to get the product as illustrated in Figure 5. Moving away from perfect competition, we may have a case illustrated in Figure 6 where the removal of the subsidy forces the closure of the enterprise and buyers cannot get the product even if they are willing to pay a price higher than the original price plus the unit subsidy.

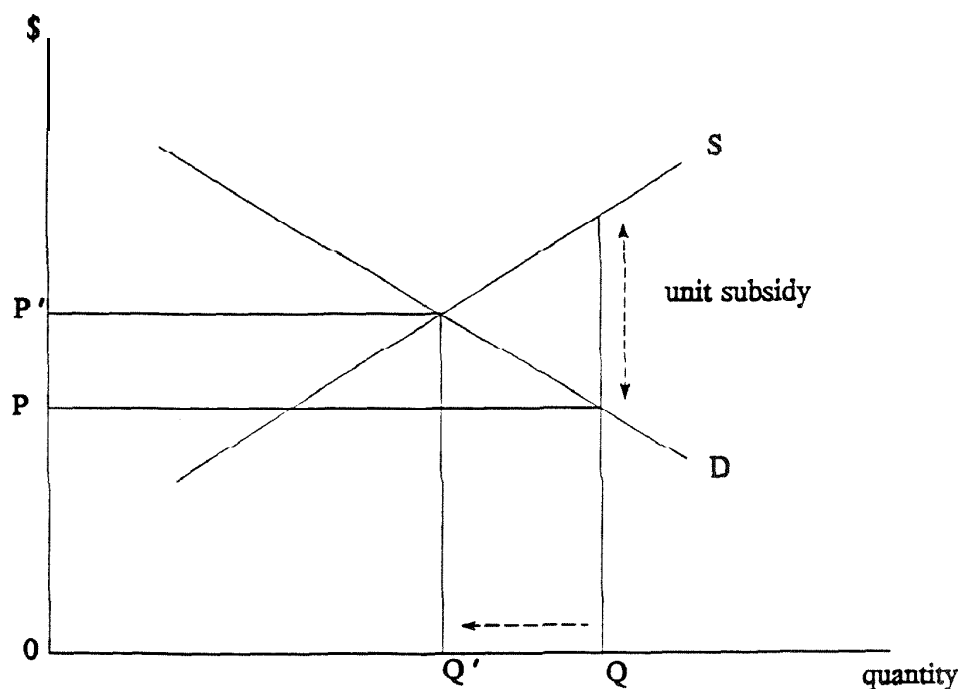


Figure 5

A market economy uses price adjustments to soften the impact of the linkage effects caused by any shocks or changes. With perfect competition, the adjustments will be the most efficient ones given the changes. Without the fast, market adjustment of prices, the Stalinist

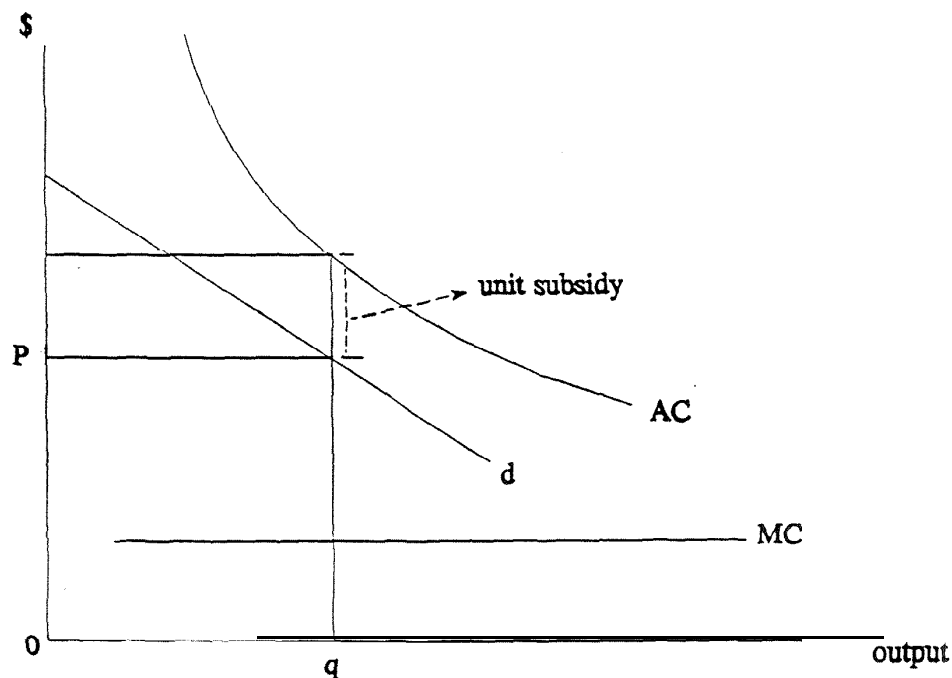


Figure 6

model is ill-equipped to cope with changes. However, at least it is not subject to possible cumulative collapses in output due to a decrease in aggregate demand. Given the adequate supply of inputs, the **Stalinist model** can continue to produce the output. It still suffers from some linkage effects but not **additional** aggregate demand effects. The transforming economies in EEFSU suffer from both these effects, Since the 1965 reform, enterprises in Soviet Union had to **sell** their products before their products are recognized as **realised** output. This made enterprises more responsive to demand. But it **also** means that the **aggregate** demand effect may come into play in the presence of shocks. Prices were **also** largely de-regulated in the big-bang transformation. This will provide more flexibility in the long run. However, in the short term, this **allows** many enterprises with monopolistic power to **raise** prices, adding to the inflationary pressure and the susceptibility to output collapses. The difficulties in the short term are related to the rigidities of the system, the lack of a secure and

clear private property right system and the associated institutions important for the **functioning** of the market. and political instability. In addition, the following consideration also increases the adjustment costs of non-perfectly competitive economies in comparison to a perfectly competitive one.

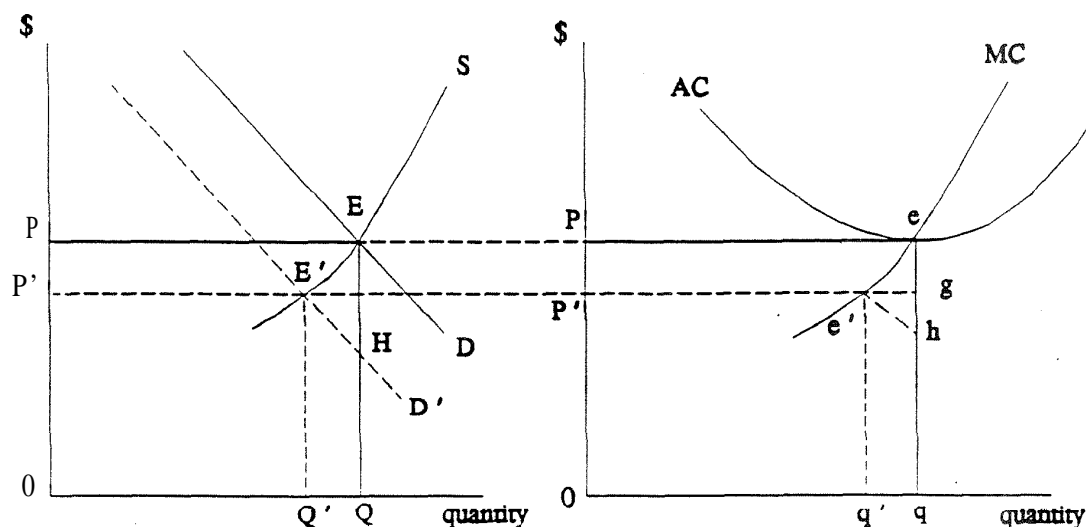
First, it may be noted that, for both short and long-run adjustments, it **usually** takes longer time to effect an upward adjustment (i.e. an increase in output) than a downward one. The reason is simple. A firm can usually reduce output or shut down almost immediately but it may not be able to expand output until the extra inputs are put in place. This is **especially** so for firms that do not carry large quantities of merchandise, raw materials, etc. **Moreover**, due to the economies of specialization, modern production typically has a **large** number of chains between primary inputs and final goods. A delay in increasing output in one of these chains will delay the output expansion possibility of all other chains down the track except **where** substantial stock holding allows temporary expansion.

**Starting from an initial equilibrium**, consider a **simple** adjustment necessitated by a contraction in demand in one industry and an expansion in demand in another. In the first stage of adjustment, suppose industry 1 contracts while industry 2 has not expanded. In a perfectly competitive model, price = marginal cost at the original equilibrium. Thus, the value of the contraction in output (measured by price) in industry 1 is offset by the cost saving (measured by the marginal cost). However, in a non-perfectly competitive model,  $\text{price} \approx \text{marginal cost} + \text{a substantial mark up}$ . In other words, the marginal cost is substantially less than the price. Thus, as industry 1 contracts, the cost **saving** is substantially less than the value of the output contraction. Thus, the asymmetrical adjustment times entail a substantial cost in a non-perfectly competitive case but not in the perfectly competitive case.

This is illustrated graphically below.

Figure 7 illustrates the case of perfect competition. The left-hand panel depicts the supply and demand of industry 1 and the right-hand panel depicts the cost situation and output decision of a representative firm in that industry. A decrease in industry demand from  $D$  to  $D'$  shifts the equilibrium point from  $E$  to  $E'$ . (The latter being short-run equilibrium if the supply curve  $S$  is taken as a short-run one.) Correspondingly, at the firm level, the equilibrium shifts from  $e$  to  $e'$  and output decreases from  $q$  to  $q'$ . This output reduction entails a cost saving measured by the area  $eqq'e'$ . At the industry level, the output reduction of  $QQ'$  entails a cost saving of  $EQQ'E'$ . The value of this output to the consumers is measured, after the reduction in demand to  $D'$ , only by  $HQQ'E'$ . Thus, the cost saving actually more than offsets the value of the output forgone. This underlines the efficiency of output contraction in industry 1 even before industry 2 has time to expand in the perfectly competitive model.'

Now consider the case of non-perfect competition illustrated in Figure 8 for a representative firm in industry 1. (Linearity in the demand and cost curves and horizontality in  $MC$  are not essential for our argument.) At the initial equilibrium point, price exceeds marginal cost by a substantial margin  $ef$ . Thus, as the demand curve shifts leftward due to the reduction of industrial demand with the number of firms unchanged in the short run, the output reduction  $qq'$  entails a cost saving  $fqq'f$  which is less than the value to the consumers by an amount measured by the shaded area  $hffe'$ . (The demand shift is taken to be equiproportional at all prices, making the curve having unchanged price elasticity at any given price. For complications due to changes in demand elasticity, non-horizontal  $MC$  curves, etc., see Ng 1986 which also provides a more complete analysis of the whole industry in Ch.5 and of the whole economy in other chapters.) Thus, before industry 2 expands, the adjustment



**Figure 7**

in industry 1 actually entails a substantial efficiency loss, a big contrast to the case of perfect competition. (If industry 2 has a comparable degree of price being in excess of marginal cost, as it expands with the higher demand, enough efficiency gain will be generated to more than offset the efficiency loss in industry 1.)

The case illustrated in Figure 2 is more relevant for non-perfectly competitive industries in market economies. The economies in EEFSU are only in the process of transformation and thus cannot be accurately described by Figure 2. However, the point illustrated has some relevance for these economies as well. Industries in these economies are typically more concentrated than those in the West. A representative enterprise typically has more market power than one in a market economy though its objective, constraints, and behavioural patterns are different from the profit-maximising firms in the West. Prices in EEFSU were also so distorted that some industries had negative values added. Contractions

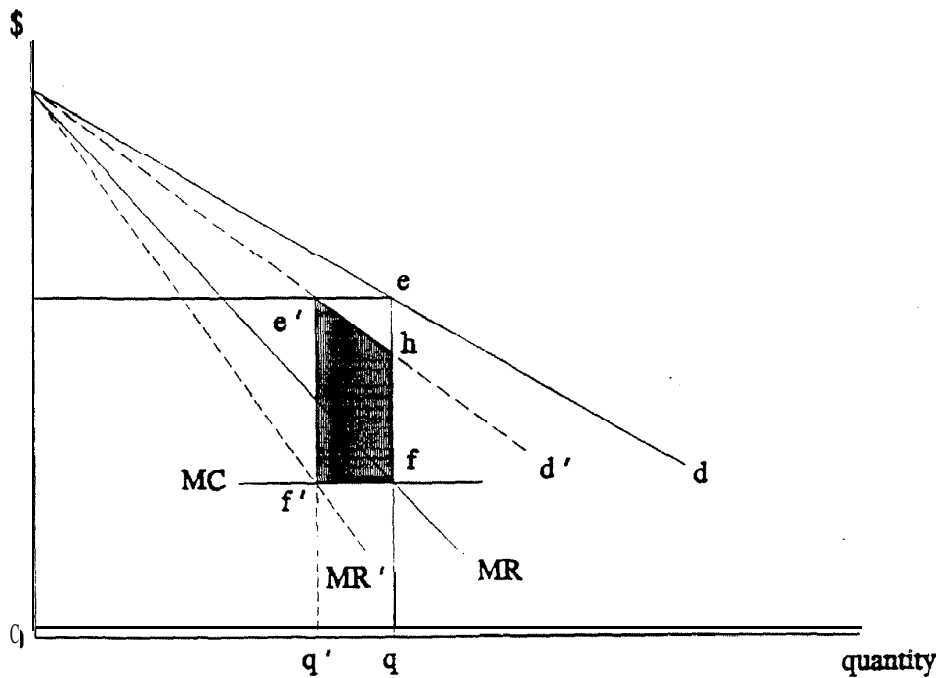


Figure 8

in such industries could save more costs than the values of the forgone products. However, there were also many industries with products under severe short supplies. Reductions in output in these products cause losses in forgone products far in excess of the cost savings. Moreover, due to the fact that prices typically exceed marginal costs, even for industries that should close down in the long run, the short-run reduction in output may actually entail losses in excess of cost savings. This is illustrated in Figure 6. In the short run, the cost saving is only the area under the MC curve which may be much smaller than the value of the forgone output, though the latter may be in turn smaller than the total cost of production.



### 3. The Chinese Experience on Gradualism: Some Qualifications

#### 3.1 Some qualifications on the Chinese experience as supporting gradualism

The transition of the USSR and Eastern European economies has run into many serious difficulties, including sharp decreases in output, increases in unemployment, galloping **inflation**, and political difficulties. In contrast, China has enjoyed sustained and higher (than pre-reform) economic growth, low inflation (single digit **annual** rates except 1988, 1989 and currently), galloping exports, and improved standard of living. (See **Table 5** on some relevant economic indicators. For recent assessments, see, e.g. Jefferson & Rawski 1994, Naughton 1994, Perkins 1994, Yusuf 1994.) It is tempting to conclude that the big-bang style of economic reforms preceded by **virtually** overnight political transition of the USSR and Eastern Europe have proved to be a failure while the Chinese method of gradualism and no dramatic **political** changes have proved successful. While political stability is certainly an important condition favourable to growth, the issues of the interrelationship and correct sequence of **political** and economic reforms are too complicated to be discussed here. The main point to be argued in this section is that the support for gradualism offered by the Chinese experience (see Chen et al 1992, **Gelb**, Jefferson and Singh 1993, **McKinnon** 1993, Wang 1994) has to be subject to a number of **qualifications**:

- (a) China underwent a big bang in its rural sector which proved to be very successful.
- (b) The **sector** of state-owned enterprises where gradualism in reform has prevailed is also the least satisfactory sector in the economy.
- (c) The **EEFSU** did not undertake the big-bang approach as the first option to reform. Rather, it is after their repeated failure in the gradual, piece-meal

approaches and the resulting **political** upheaval that the big-bang approach was undertaken.

- (d) China enjoyed many favourable factors not available to the EEFSU.
- (e) While still growing rapidly, China is not currently without some major **problems**.

Point (b) is well known and officially **acknowledged**. (Official Treasury's figures show that 46.3% of state enterprises were making losses in the first **half** of 1994. **The** total **losses** amount to 21.97 billion yuans, an increase of 22.8% over the same period in 1993.) Points (a), (c) and (e) are briefly discussed here; point (d) is discussed in more detail below

Before the reform, agricultural production in China was organized by communes (corresponding to the township level) which were divided into brigades (villages) and production teams. A production team consisted of dozens or more of households and was the basic unit of production. Production decisions were decided from above and incentives were low. Growth in agricultural output barely kept up with population growth. By 1978, the agricultural sector still accounted for 70.7% of total employment. Within three years (1979-1982) in the initial period of the reform, the household responsibility system replaced the old system for **virtually the** whole country. This system emerged spontaneously from below but was subsequently given official sanction and encouragement. It effectively privatized agricultural production except that the land was still **officially** owned collectively and only on lease to individual household farmers (initially for five years but extended in 1984 to 15 years for **annual** crops and to 50 years for tree crops). As is well known, the household **responsibility** system led to immediate leaps in output. (Lin et al 1993 estimated that almost half of the 42.2% growth of output in the cropping sector over 1978-84 was accounted by productivity change due to reforms.) However, after the mid 1980s, the rate of increase in

**agricultural** output decreased to a low level. This may be related to the incompleteness in the big bang; the *lack* in outright ownership rights in **land** retards long-term investments.

The **EEFSU** had tried many **times** in reforming their economies before the **Gorbachev-Yeltsin** transformation. This is **also recognised** by Chinese economists, as witnessed by the following quote. *"In the reforms of economic system in the Soviet Union and Eastern European countries, some have made **progress**, some have gone **astray**; . . . But every country has gone a step earlier than us [i.e. China]"* (Wang 1987, p. **40**; the present titer's translation).'

In fact, even *"after the **fall** of communism in Eastern Europe in 1989, and in the Soviet Union in 1991, many of the new regimes tried to main a **gradual approach** to **reform**. Governments in **Bulgaria**, **Romania**, **Slovakia**, and **Ukraine** staked out ideological positions against **radical** reforms, only to **arrive** in 1993 at much deeper crises than their **neighbours**. ... The **real** question is **not** why 'shock **therapy**' was **adopted** in **several** countries, but why **gradualism** failed where it was tried"* (Sachs and Woo 1993, p. 25).

On the other hand, while China has enjoyed price stability (relatively speaking) and **spectacular** growth in output, exports, and living standard, it is not without some serious problems, economically and **politically**, including widespread corruption and the unsolved problem of rural-urban discrepancy. With political reform lagging far behind economic reform, there is some uncertainty whether the government **will** survive the possible disturbance **following** Deng's death, though the continuing good performance economically may carry it through.

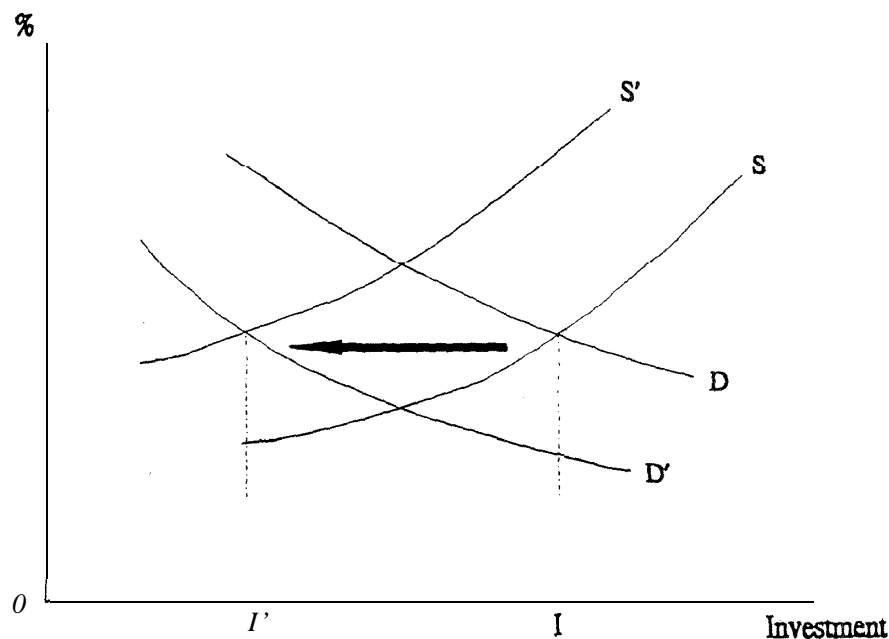
### 3.2 Some advantages of China

#### 3.2.1 Political stability

First and in my judgment, probably foremost, China has largely enjoyed political stability at and since the time of the reform. When the reform was introduced in December 1978, the country had **only** emerged from the decade of the **Cultural Revolution (1966-1976), the death of Mao (1976), the downfall of the Gang of Four (1976), and the transition of power** from Hua (Mao's designated successor) to Deng (1978). Fed up with political struggles in the Cultural Revolution, the overwhelming majority of the **people** supported the pragmatic ("As long *as the cat catches mice*, it does not matter *whether* it is white or *black*" -- Deng's famous saying) and **economically** oriented **policies** of Deng. Though much weakened by the disillusionment associated with the Anti-Right Movement, the failure of the Great Leap Forward (1958-1961), and the **Cultural Revolution**, the Communist Party was **still firmly** in control. The country is also much more homogeneous than USSR **ethnically**. The predominant ethnic group, Han 漢, accounts for 92% of the population. Though the Southern Chinese (Han 漢) speak different dialects (in particular, Cantonese, spoken in the Southern Province of Guangdong, is quite different from Mandarin), the written language *is* basically the same. (In recent years, the written language in Hong Kong, where Cantonese is spoken, has differentiated itself by the increasing adoption of colloquial Cantonese into written **form**.<sup>3</sup> But **this is less so in Guangdong** ) **Moreover, the majority of middle-aged and younger people** speak Mandarin. Thus, with the exception of isolated provinces **like** Tibet, China does not face the political **instability** and disintegration caused by ethnic diversity as in USSR.

The importance of political stability for economic growth cannot be over-emphasized. In fact, the insufficient safeguard and security of property rights is probably the major factor

accounting for the economic difficulties in EEFSU. (See, e.g. **Clague & Rausser** 1992, Olson 1992.) **It** is no surprise that, e.g., among the former Soviet republics, Armenia, which has the highest degree of political and military disturbances, has **also** suffered the iargest **collapse** in output (55.3% over 1990-92 in comparison to 14.5% to 32.7% for other republics; see **IMF**, *World Economic Outlook* 2, 1992, p. 46). **Instability** brings insecurity in properties. This severely retards economic activities especially investments. This impediment to investment is double-acting since the lenders require higher interest rates **and** the investors expect lower returns due to the instability. As illustrated in Figure 9, investment is reduced both by the upward movement of the **supply** curve of investment funds and the **downward** movement of the demand curve.



**Figure 9**

**It** might be queried that the alleged double-acting effects involve double-counting, since the risk **to** the property involved concerns the same property. There is really no **double-**

counting since the higher uncertainty does apply to both the lender and the investor. If the investment is lost and the investor cannot pay the borrowed money back to the lender, it is not just the lender who loses (the money), the investor also loses. Not only does he lose the time and effort (which partly **also** applies to the case of a proprietor investor), he also suffers from the trouble of debt collection and the loss of reputation. With specialization, more people are doing different activities to achieve the same outcome. This taps the economies of **specialization** but also increases the number of **linkages** or steps necessary to secure the outcome, making the whole endeavour more vulnerable to risk, unless the riskiness of each step is substantially reduced. (For an analysis, see Yang & Ng 1993, Chs. 10 and 11.)

### 3.2.2 *Favourable initial economic conditions*

When the reform was introduced at the end of 1978, substantial growth has been maintained after the initial chaotic years of the Cultural Revolution as may be seen in Table 5. More importantly, both inflation and the balance of payments had been kept under very tight control. The official statistics shows some disinflation in the period 1963-67 and virtually no inflation since then up to 1978.<sup>4</sup> Moreover, in vast **contrast** to many Eastern European countries, China had virtually no external debt at the introduction of the reform. This **allowed** China to benefit from substantial **inflow of external resources** without **alarming** either the external lenders and investors or the Chinese policy makers. The growth in foreign investment is shown in Table 6.

**Table 5: Selected Macroeconomic Indicators**  
*(Annual percent change, unless otherwise specified)*

	Red Net Material Product <sup>1</sup>	General Retail Prices	Government Budget Balance <sup>2</sup>	Exports <sup>3</sup>	Imports <sup>3</sup>	Trade Balance <sup>3</sup>
<b>1952</b>	..	..	1.3	0.8	1.1	-0.3
1953	14.0	3.4	0.4	1.0	1.4	-0.4
1954	5.8	2.3	2.2	1.1	1.3	<b>-0.2</b>
<b>1955</b>	6.4	1.0	0.3	1.4	1.7	<b>-0.3</b>
1956	14.1	..	-0.2	1.6	1.6	..
1957	4.5	1.5	0.7	1.6	1.5	0.1
1958	22.0	0.2	-1.9	2.0	1.9	0.1
1959	8.2	0.9	-5.3	2.3	2.1	0.2
1960	-1.4	3.1	-6.7	1.9	2.0	-0.1
1961	-29.7	16.2	-1.1	1.5	1.5	--
1962	-6.5	3.8	0.9	1.5	1.2	0.3
1963	10.7	-5.9	0.3	1.6	1.3	0.3
1964	16.5	-3.7	...	1.9	1.5	0.4
1965	16.9	-2.7	0.5	2.2	2.0	0.2
1966	17.0	-0.3	1.0	2.4	2.2	0.2
1967	-7.2	-0.7	-1.5	2.1	2.0	0.1
1968	-6.5	0.1	0.1	2.1	2.0	0.1
1969	19.3	-1.1	...	2.2	1.8	0.4
1970	23.3	-0.2	0.7	2.3	2.3	
1971	7.0	-0.8	0.6	2.6	2.2	0.4
1972	2.9	-0.2	...	3.4	2.9	0.5
1973	8.3	0.6	..	5.8	5.2	0.6
1974	1.1	0.5	-0.3	6.9	7.6	-0.7
1975	8.3	0.2	-0.2	7.3	<b>7.5</b>	-0.2
1976	-2.7	0.3	-1.2	6.9	6.6	0.3
1977	7.8	2.0	1.1	7.6	7.2	0.4
1978	11.7	0.7	0.3	9.8	10.9	-1.1
1979	7.6	2.0	-5.1	13.7	15.7	-2.0
1980	7.9	6.0	-3.5	18.1	20.0	-1.9

1981	4.4	2.4	-0.6	22.0	22.0	...
1982	8.8	<b>1.9</b>	-0.7	22.3	19.3	3.0
1983	10.4	1.5	5.9	22.2	21.4	<b>0.8</b>
1984	14.7	2.8	-0.8	26.1	27.4	-1.3
1985	12.8	8.8	0.3	27.4	42.2	-14.8
1986	<b>8.1</b>	6.0	5.9	<b>30.9</b>	<b>42.9</b>	<b>-12.0</b>
1987	10.9	7.3	5.9	<b>39.4</b>	43.2	-3.8
1988	<b>11.3</b>	18.6	-0.7	47.5	55.2	-7.7
1989	4.4	17.8	-0.7	52.5	59.1	<b>-6.6</b>
1990	4.1	2.1	-1.0	62.1	53.4	<b>8.7</b>
1991	7.7	2.7	-0.8	71.9	63.8	8.1
1992	13.0	5.3	-1.0	85.0	80.6	4.4
1993	13.4	13.7	-0.7	91.8 (8%)'	104.0 (29%)'	-12.2
1994 (1st half)	11.6	19.8		48.3 (30.2%)'	49.2 (21.1%)'	-8.2
July 1994		<b>21.4</b>		<b>35.7%</b>	<b>9.7%</b>	<b>-8.2</b>

**Source:** *China Statistical Yearbook, 1992*. Figures for 1993 and 1994 are from various Chinese publications.

<sup>1</sup> From 1978, the series is gross national product.

<sup>2</sup> Revenue minus expenditure on the basis of the authorities' definitions in percent of net material product or gross national product.

<sup>3</sup> In billions of U.S. dollars, on a customs basis.

<sup>4</sup> *Growth rates over figures a year ago.*



**Table 6: Growth in Foreign Investment Flow**  
(*Billion of US Dollars*)

	<b>Contracted Value</b>	<b>Realised Value</b>	<b>Growth Rate of Realised Value %</b>
<b>1979-1982</b>	4.958	1.769	
<b>1983</b>	1.731	0.915	
<b>1984</b>	2.875	1.419	55.08
<b>1985</b>	6.333	1.956	31.84
<b>1986</b>	2.834	2.244	14.72
<b>1987</b>	3.709	2.314	3.12
1988	5.297	3.194	<b>38.03</b>
<b>1989</b>	5.6	3.393	6.23
<b>1990</b>	6.596	3.487	2.77
<b>1991</b>	11.98	4.366	25.21
<b>1992</b>	<b>58.12</b>	11.6	165.69
<b>1993</b>	110.8	25.759	122.06
<b>1994*</b>	532.0	153.2	494.72

Source: **Ministry** of Foreign Trade and Economic Cooperation, China.

\* Figures for 1st half of 1994 times two.

### 3.2.3 *Shorter period under communism than USSR*

By the time of the reform in 1978, China had not quite completed its third decade under communism (since 1949). En contrast, by late **1980s**, USSR had been under communism for seven decades. Thus, no **economically** active persons in USSR had **pre-**communist experiences while the same is not true in China. This makes it more difficult for USSR to effect the transition. People take the communist system as "**natural**" and the entrepreneurid spirit required for the market system to work is less forthcoming in **USSR than**

in China. However, the importance of this factor must not be over-emphasized. Given the right conditions, the required entrepreneurial **talents will** be forthcoming.

#### 3.2.4 *The relevance of Olson's institutional theory of sectional coalitions*

The different **lengths** of time after the communist revolution may however be a significant factor affecting economic growth according to Olson's (1982) institutional **theory** of sectional coalitions. **Roughly, a major devastating event like a revolution or being** conquered in a major war eliminates most of the interest groups of a country. These groups **fight** for their sectional interests and hence are usually counter-productive to economic efficiency and growth. As the organization of **a** group has the property of **being a public** good (for the group), it is difficult to form quickly due to the free-rider problem (Olson 1965). **It** thus takes a fairly long period for such interest groups to become influential again after a major disturbance that destroys them. **The** theory has been used to explain the spectacular post-war growth in countries like Japan and Germany and the relative stagnation of countries like **England**.

China did not just suffer the communist takeover in 1949, it **also** underwent **ei ght years** of Japanese invasion (1937-1944), and decades of civil wars before and after this invasion. It is true that the USSR also suffered the German invasion but the effects were clearly less devastating than the Japanese invasion of China. For the case of the German **invasion of the** USSR, the length was much shorter and the capital (Moscow) did not **fall**. For China, the Nationalist government had to surrender the capital **Nanjing** and moved right back to the southwest town of Chongqing. Practically the whole of China's northeast, north, **cen tral and** coastal areas including most major cities **like** Beijing, Shanghai, Shenyang **ail** fell.

After the communist takeover, China suffered further devastating events, including the Great Leap Forward (1958-61) and the Cultural Revolution (1966-1975). Thus, in terms of starting from a clean sheet, China was **certainly** much cleaner than the USSR. **However, a** closer study is certainly warranted.

### 3.2.5 Lower stage of development

In 1978, China was still basically a peasant society with more than 70% of the employment in agriculture. **In** contrast, less than 14% of **employment** was in agriculture for Russia in 1985. (See Table 7.)

**Table 7: Distribution of Employment by Sector**

	<u>China 1978</u>		<u>Russia 1985</u>	
	<i>Millions</i>	<i>%</i>	<i>Millions</i>	<i>%</i>
<b>Agriculture</b>	283.7	70.7	10.4	<b>13.9</b>
<b>Industry</b>	<b>60.9</b>	15.2	24.3	<b>32.4</b>
<b>Construction</b>	8.8	2.2	7.1	9.4
<b>Transport</b>	7.4	1.8	7.3	<b>9.8</b>
<b>Commerce</b>	11.6	2.9	5.9	<b>8.3</b>
Other	29.1	7.2	19.7	26.2

Source: For Russia, *IMF Economic Review of the Russian Federation*, April 1992, Table 3, p. 55.  
*China Statistical Yearbook 1992*, Table 4.2, p. 80. Reproduced from **Sachs and Woo (1993)**.

As Xiaokai Yang (personal communication cited in Sachs and Woo 1993, p.6) puts it, the USSR developed a **high** degree of **division of labour** under central planning that is

inefficient and very **difficult** to reorient. Pre-reform **rural** China had a very low extent of division of **labour**, making the creation of a market-based division of **labour much** easier. In fact, the big bang in the early stage of the Chinese reform • the effective privatization of virtually the whole of the agricultural sector • was achieved within two or three years almost effortlessly by the spontaneous initiative of the peasants. The **early** success in the **easier** reform in **agriculture** also generates **political** dynamics in **favour** of further reforms.

An unnoted advantage of being at a lower stage of development and commercialisation is the bigger scope for non-inflationary expansion in money supply as the economy becomes more commercialised. Before 1978, the majority of people in China held very little amount of cash and bank deposits due to the small amount of cash exchanges. Since then, cash holding and bank deposits increased **dramatically**. (See Table 8.) This increased willingness to hold cash allows the *central* government to fund budget deficits by monetary expansion without adding to inflationary pressure.

### 3.2.6 *The flexibility of a more **decentralized** system*

**Qian** and Xu (1993) explain the **relative** ease of the Chinese transition by its more decentralized, multi-layer, multi-regional form of organizing the economy based on the **territorial principle** (M-form), in contrast to the unitary form based on the functional or specialization principle (U-form) of the USSR and Eastern Europe. Also, the Soviet economy **was simply more centralized** than the Chinese. For example, "*while China centrally allocated about 210 commodities in 1978, the Soviet Union centrally allocated more than 10,000 commodities*" (Lee 1993, p. 71).

Table 8: **Growth** in Saving Deposits

<i>Year</i>	<b>Household Savings Deposit</b> ( <i>RMB billion</i> )	<b>As % of GDP</b>
1978 <sup>1</sup>	21.06	<b>5.87</b>
<b>1979</b>	<b>211.10</b>	<b>7.03</b>
<b>1980</b>	39.95	8.94
<b>1981</b>	<b>52.37</b>	<b>10.97</b>
<b>1982</b>	67.54	13.03
<b>1983</b>	89.25	15.42
<b>1984</b>	121.47	17.53
<b>1985</b>	162.26	19.03
<b>1986</b>	223.76	23.10
<b>1987</b>	307.33	27.18
<b>1988</b>	380.15	27.01
<b>1989</b>	514.69	32.17
<b>1990</b>	703.42	39.78
<b>1991</b>	911.03	45.13
<b>1992</b>	1154.54	48.07
<b>1993<sup>2</sup></b>	1476.4	47.05
<b>1994 (1st half)<sup>3</sup></b>	<b>1772.7</b>	<b>53.40</b>

**Sources:** <sup>1</sup> *Statistical Yearbook of the Republic of China 1993, (1978-1992)*

<sup>2</sup> *People's Daily* (International Edition), March

<sup>3</sup> *People's Daily* (International Edition), August

Partly to tap economies of specialization and partly for better control from Moscow, the Eastern European and the Soviet economies were **organized** in the T-J-form, with mnst enterprises "**grouped** by industry and under the direct supervision of ministries. and **regional** governments **were primarily** subordinates of the **centre** and their **roles** were limited to

collecting information *from below* and implementing **plans from above** without **much autonomy**” (Qian and Xu 1993, p. 143). In China, partly for historical *reasons* and **partly** to overcome poor communication and transportation and as a precautionary measure against possible invasion from the USSR and the USA, the economy was organized in the M-form, in which each region at each layer was a relatively self-sufficient operating unit which **controlled** its own enterprises. There were six administrative **levels**: central (中央), provincial (省), prefecture (州), county (縣), township (鎮), and village (村). In 1978, the share of industrial output of state-owned industrial enterprises controlled by the central government was less than half of the national total (Wong 1987). In EEFSU, almost **all** of the rather small number of enterprises in the automobile industry were directly controlled by the central government. In pre-reform China, there were 58 enterprises making automobiles and most of them were controlled by the local governments (Wang and Chan 1991). In China, the number of products directly under the control plan was only 791 in 1979 (Zhu 1985) in vast contrast to more than 12 **million** in the USSR in the late 1970s (Nove 1980).

It is not difficult to see that the less centralized M-form organization in China makes the transition to a market economy easier as it is less different from a market economy (than the U-form of the USSR), more flexible, and more amenable to regional experimentation, competition, and emulation.’

### **3.2.7 High saving propensity and entrepreneurial ability**

Without attempting to emphasise the ethnic factor, completeness requires the mention of the high saving propensity (Table 9) and **entrepreneurial** ability of the Chinese people. It

may not be an accident that three of the Four Asian Dragons (Hong Kong, Taiwan, Singapore) have overwhelming majority of their population being Chinese and the fourth (Korea) has been heavily influenced by the Chinese culture. The second group of the Asian Tigers (Thailand, Malaysia, Indonesia) have a **sizeable** minority of Chinese population who are disproportionately active in their commercial and industrial **sectors**. **Moreover, their rates** of economic growth are inversely related to the severity of their anti-Chinese policies.

**Table 9: Gross Domestic Saving Ratios\***  
(Percentage of GDP)

	1980	1985	1990	1991	1992
China	31.5	35.0	32.8	32.8	34.3
Australia	21.4†	18.6†	18.6†	16.8†	16.21
Japan	31.3*	3.15*	33.9*	35.1†	33.9†
U.S.A.	18.3*	15.6*	14.5*	15.4†	14.51
OECD members	22.57	21.1†	20.11	20.57	19.4†

Sources: \*World Table 1992, World Bank

†OECD *Economic Outlook*, May 1994

Figures for China from *Statistical Yearbook of China*. (Figures are not perfectly comparable.)

### 3.2.8 Confucianism

The Industrial Revolution took place in Western Europe, not in China which led the world for many centuries **in** many fields. The dominant **explanation** is that of Weber (1964) that Confucianism impedes development **while** the Protestant ethics is conducive to economic growth. However, in the recent decades, after the dramatic post-war growth of Japan and the recent rise of the Asian dragons, commentators (e.g. Balassa 1988, Chen 1979, Coppel 1983,

Kahn 1979, Kuznets 1988, Lau 1989, Morishima 1982) *again* attributes **this** to the contribution of Confucianism. Are these contradictory? It certainly appears so. However, as elaborated further in Appendix B, it may be argued that there need be no **contradiction**.

Factors affecting economic development and growth are not confined to **the cultural** factors. **However**, as far **as** cultural factors **are** concerned, confucianism contains aspects that are **unfavourable** to development and **also** aspects that are favourable to development. This is of course **rather** commonsensical and **probably** widely acceptable. Nevertheless, in Appendix B, it is further argued that

- (a) Confucianism contains factors that impede the introduction and **development** of a market economy. However, given the existence of a market economic system, confucianism contains factors favourable to a higher rate of **growth**.
- (b) A major mistake of Confucianism is not to differentiate between **principles** **suitable** for running a *family* and those **suitable** for running a country.

**While** Confucianism has impeded the introduction and development of a market economic system in China for many centuries, in economies (such as the Asian dragons) where the market *economic* system and the associated *Law and order* requirements are somehow introduced (significantly affected by the external factor of the British colonial **rule** for Hong Kong and Singapore), the factors in Confucianism that are favourable to higher growth then serve to raise the growth rates. Similarly, with the transition to a market economy in China, elements of Confucianism help to achieve higher growth **rates**. (See Appendix B for details.)



### 3.2.9 *Hong Kong, Taiwan, and overseas Chinese*

There are 6 million people in Hong Kong, 21 **million** in Taiwan, and over 15 million overseas Chinese in Southeast Asia **alone**. These **economically** very active **people and their** success not only is one of the factors contributing to China's transition but also serves to help in the development process of China after the reform. For one thing, these people provide significant amount of capital as **well** as entrepreneurial, **technical** and professional skills important for the deveiopment of China. This takes several forms, including investments (including joint ventures), remittances (such as contributions towards building a bridge in one's village of origin), and personal participation for various economic activities. As may be seen in Table 10, Hong Kong and **Macao** (with the former accounting for the overwhelming majority of the total) alone accounts for roughly two thirds of the total foreign investment in terms of project number, contracted values, and **realised** values. (**However**, parts of the investment from Hong Kong may originate from other parts of the world.) In recent years, Taiwan has also been increasing its share significantly.

Hong Kong, Taiwan, and overseas Chinese are important not just in providing **very** significant amounts of investments. Due to language and cultural affinity, these entrepreneurial people are **also** best suited to undertake successful business ventures in China and also to provide important links to the rest of the world. While a significant section of these business people do engage in different types of **tricks** (such as pseudo joint-ventures where the "foreign" investments **really** come from the Chinese enterprises that attempt to enjoy favourable conditions or trips overseas) that may be harmful **to** the economy, **the overall** effects are most certainly positive.

**Table 10: Pattern of Source Counties of FDI in China (1979-1992)**  
*(Value: US\$ Billion)*

Source Countries	Project No.	Share %	Ranking	Contracted Values	Share %	Ranking	Realised Value	Share %	Ranking	Average Project Size	Ranking	Rate of Implementation %	Ranking
HK&M	63,279	70	1	74.18	69.6	1	21.243	61.96	1	0.0117	8	28.64	6
Taiwan	10,034	11.05	2	8.472	7.95	2	1.917	5.59	4	0.0084	11	22.63	8
USA	5,269	5.8	3	7.847	7.36	3	3.174	9.26	3	0.0149	5	40.45	2
Japan	3,694	4.07	4	5.974	5.561	4	3.879	11.31	2	0.0162	4	64.93	1
Singapore	1,371	1.51	5	1.893	1.78	5	0.4	1.17	6	0.0138	7	21.13	9
South Korea	943	1.04	6	0.616	0.58	10	0.176	0.51	9	0.0065	12	28.57	7
Thailand	590	0.65	7	0.1026	0.59	9	0.123	0.36	11	0.0109	10	19.49	10
Canada	581	0.64	8	0.631	0.96	7	0.158	0.46	10	0.0174	3	15.40	11
Australia	541	0.6	9	0.607	0.57	11	0.228	0.66	8	0.0112	9	37.56	4
Philippines	213	0.31	10	0.391	0.96	8	0.358	1.04	7	0.038	2	34.96	5
UK	268	0.3	11	0.1024	0.37	12	0.042	0.12	12	0.014	6	10.74	12
Germany	243	0.27	12	1.209	1.13	6	0.471	1.37	5	0.049		38.96	3
<b>Total</b>	<b>90,791</b>	<b>100%</b>		<b>106.564</b>			<b>34.283</b>			<b>0.0117</b>		<b>32.17%</b>	

Source: MOFTEC (Ministry of Trade and Economic Cooperation, China)

### **3.2.10 The benefits of the three disasters of Mao**

Even in accordance to the principles of communism, Mao committed many serious mistakes (which may not all be mistakes from the viewpoint of maintaining his personal power); the most serious three were of disastrous proportions. First, there was the **Anti-Right Movement** in the mid 1950s. It **started** with Mao's call for the **whole** country to criticise the Communist Party, the government, and the leaders. **After** much hesitation and a lot of official encouragement, when criticisms did flow forth in masses, Mao purged the **critics as "rightists"**. **In Chinese, the concept "plot" is called "dark manoeuvre" (yin mou).** Mao was proud in calling his obvious plot "open manoeuvre" (yang mou). Dark or open, the plot **effectively** made the whole population silent thereafter. The second disaster was the infamous "Great Leap Forward" (from 1958) which proved to be great leap backward. With most resources concentrated in raising **steel** production (including taking off cooking utensils and good iron window frames from houses as the raw material to make steel), agricultural output slumped and three years of starvation ensued (1959 - 1961), with more people starved to death than all the starvation during the Nationalist period. The third disaster was of course the notorious "Great Proletariat Cultural Revolution" (1966 - 1975) which did prove to be the very greatest in inflicting enormous mental as well as physical sufferings.

With the effects and memories of the three disasters (especially the fairly recent Cultural Revolution) still freshly in mind, the Chinese people are much more anti-communist in heart and eagerly looking for a change. Thus, the "*Chinese transformation began with millions of peasants and others virtually beating at the gates of government to dismantle the restraints of the past and to let them work and thrive. When the gates were let down, they rushed in, and produced that remarkable surge of output. Soviet farmers, however, were not beating at the gates for an end to collective farming, and state enterprise managers were*

*exceedingly **chary** of **radical reform**. It was only in the **cooperatives** and other independent enterprises that one found the kind of economic initiative that burst forth all over China and launched the **rapid** rise of output” (Berliner 1993, p. 19).*

In the USSR, some horrible purges were committed in the early years under Stalin. However, after Stalin, while the regime was still oppressive and inefficient, there had not been serious disasters comparable to those committed by Mao in China. Thus, the *"drive for economic transformation was therefore a revolution from above, imposed on a wary population by a small group of leaders who foresaw that in the absence of a radical transformation the Soviet Union would be left increasingly behind in the world's economic progress"* (Berliner 1993, p. 19).

#### 4. Concluding Remarks

The preceding section suggests that China enjoys many advantages not available to EEFSU. Thus, the economic success (so far) of the largely gradual reform in China does not necessarily mean that a similar gradual reform process will also be successful in EEFSU.<sup>6</sup> However, they should not be overemphasised as EEFSU no doubt also enjoys certain advantages such as being closer culturally to the developed West, having a better educated population and a rich legacy of engineering skills, and a more law-abiding tradition. In fact, at the commencement of the big transformation, most observers would probably regard EEFSU as having more important advantages. Using the advantages of China to explain the success of its economic reform now is facilitated by hindsight. Moreover, we certainly are not arguing that gradualism does not work or that it is inferior to big bang. Further studies

**on this important issue are needed.**

The analysis of Section 2 adds to the need for **caution** in using the **big-bang** approach. However, some of the arguments in that section are less rigorous than others. For example, the analysis of **intersectoral** adjustments would benefit from a more formal general equilibrium modelling. Time permitting, the present author will undertake this further study.

## Appendix A

In this appendix, we provide the mathematical analysis of results illustrated graphically in the text.

For the general case of either perfect or non-perfect competition, we may regard the product of each firm as a distinct good, then, from the maximization of a general utility function

$$(A1) \quad U = U(x^1, x^2, \dots, x^N)$$

where  $U$  = utility,  $x^i$  = amount of the  $i$ th good consumed, subject to a budget constraint

$$(A2) \quad \sum p^i x^i = \alpha$$

where  $p^i$  = price of the  $i$ th good,  $\alpha$  = budget constraint = nominal aggregate demand, as we are dealing with the whole economy, we have the demand function

$$(A3) \quad q^i = f^i(p^1, p^2, \dots, p^N, \alpha), \quad i = 1, \dots, N$$

Now, to avoid a fully general equilibrium analysis, I adopted a crucial simplification to arrive at the mesoeconomic analysis. This is to concentrate on the representative firm and replace the price vector of all other firms by the average price. Without loss of generality, call this representative firm "Firm 1". From (A3), we then have

$$(A4) \quad q^1 = f^1(p^1, P, \alpha)$$

where  $p^2, \dots, p^N$  has been replaced by  $P$ , the average price of  $p^2, \dots, p^N$ . Due both to the fact

that Firm 1 is representative, and the fact that it is assumed **small** relative to the whole economy, this average price  $P$  is also the **general** price level of the economy. In Ng (1986, Appendix 3I), a fully general equilibrium analysis is used to show that (1) for any (exogenous) change (in cost or demand) there exists (in a hypothetical sense) a representative firm whose response to the change accurately (no approximation needed) represents the response of the whole economy in aggregate output and average price, and (2) a representative firm defined by a simple method (that of a weighted average) can be used as a good approximation **of the response of the whole economy to any economy-wide change in demand and/or costs** that does not result in drastic inter-firm changes.

Since demand functions are homogeneous of degree zero in all prices and the budget, we may divide all elements in the functional form in (A4) by  $P$  to obtain, dropping superscript,

$$(A5) \quad q_4 = f(p/P, \alpha/P)$$

where the effect of  $P/P$ , being a constant, is defined into the functional form off.

The representative firm is assumed to take the aggregate variables as given and maximize its profit with respect to its own output or price. Its profit function is

$$(A6) \quad pf(p/P, \alpha/P) - C(q, Y, P, \epsilon^c)$$

where  $C$  = total cost,  $Y$  = aggregate output of the economy,  $\epsilon^c$  exogenous factors affect costs. The possible effects of  $Y$  on  $C$  may work through the input market. It may be noted that the cost function is rather general. The first-order condition for the maximization of (A6) gives

$$(A7) \quad \mu = p \left\{ 1 + \frac{1}{\eta \left( \frac{p}{P}, \frac{\alpha}{P} \right)} \right\} = c(q, Y, P, \epsilon^e)$$

where  $\eta \equiv (\partial q / \partial P) p / q$ ,  $c \equiv \partial C / \partial q$  are respectively the price elasticity of demand and marginal cost and  $\mu$  is marginal revenue.

From the representativeness of the firm and the requirement of equilibrium, we have

$$(A8) \quad P = p$$

$$(A9) \quad \alpha / P \equiv A = Y = qN$$

where  $A$  = real aggregate demand,  $N$  = number of firms. (The latter is taken as given in the short-run exercise. Otherwise, an additional equation of free entry/exit may be added; see Ng 1986, Ch. 4. The possible feedback of changes in profit is allowed through the effect of real income on aggregate demand in Eq. 10 below, abstracting from distributional effects.)

The nominal aggregate demand of the economy is taken to be a function of  $P$ ,  $Y$  (real income which equals real output at equilibrium) and some exogenous factors  $\epsilon^\alpha$  which should include the money supply.

$$(A10) \quad \alpha = \alpha(P, Y, \epsilon^\alpha); 1 > \eta^{\alpha P} > 0, 1 > \eta^{\alpha Y} > 0$$



where the restriction  $1 > \eta^{cY} > 0$  is similar to the case of the Keynesian cross diagram that

the slope of  $C + I$  is positive but less than one to avoid an explosive system. Similarly for  $\eta^{aP}$ . (A10) is a very general function and include the simple Keynesian and Monetarist aggregate demand functions as special cases. This **completes the specification of our very** simple, general, but powerful model. We turn now to the comparative-statics analysis. The total differentiation of (A7), after substituting in the total differentiation of (A8) and (A9), division through by  $\mu$  or  $c$ , gives

$$(A11) \quad (1 - \eta^{cP}) \frac{dP}{P} - (\eta^{cQ} + \eta^{cY} - D) \frac{dY}{Y} = \frac{d\bar{c}}{c}$$

where  $\eta^{cY} \equiv \frac{\partial x}{\partial y} \frac{y}{x}$ ,  $D \equiv \frac{\partial \mu}{\partial A} \frac{A}{\mu} \mid p, P \mid = - \frac{p}{\eta} \frac{\partial \eta}{\partial A} \frac{A}{\eta}$  is the proportionate effect of real

aggregate demand on marginal revenue at given prices through possible effects on the demand

elasticity (in Ng 1982,  $D$  is assumed zero for simplicity),  $d\bar{c} \equiv \left( \frac{\partial c}{\partial \epsilon^c} \right) d\epsilon^c$  is the exogenous

change in marginal cost.

The total differentiation of (A10), after dividing through by  $\alpha$  and substituting in  $d\alpha/\alpha = dP/P + dY/Y$  from the total differentiation of (A9), gives

$$(A12) \quad (1 - \eta^{aP}) dP/P + (1 - \eta^{aY}) \frac{dY}{Y} = \frac{d\bar{\alpha}}{\alpha}$$

where  $d\bar{\alpha} \equiv \left( \frac{\partial \alpha}{\partial \epsilon^a} \right) d\epsilon^a$  is the exogenous change in **nominal** aggregate demand.

Substituting  $dY/Y$  and  $dP/P$  from (A12) **in turn** into (A11), we obtain

$$(A13) \quad \Delta \frac{dP}{P} = (\eta^{cQ} + \eta^{cY} - D) \frac{d\bar{\alpha}}{\alpha} + (1 - \eta^{aY}) \frac{d\bar{c}}{c}$$

$$(A14) \quad \Delta \frac{dY}{Y} = (1 - \eta^{cP}) \frac{d\bar{\alpha}}{\alpha} - (1 - \eta^{aP}) \frac{d\bar{c}}{c}$$

where  $A \equiv (1 - \eta^{aY})(1 - \eta^{cP}) + (1 - \eta^{aP})(\eta^{cQ} + \eta^{cY} - D)$ . Thesetwoequationsare

the basic comparative-statics results which can be used to **analyse** the general equilibrium effects of economy-wide changes *in* demand and costs on the price level and aggregate **output** of the economy. For example, to anaiyse the effects of a change in nominal aggregate demand (including a change in money supply), we put  $d\bar{c} = 0$  (i.e. no exogenous **cost**

shifts; this is not a partial-equilibrium **analysis** since endogenous cost changes are allowed through  $\eta^{cP}$ ,  $\eta^{cY}$ , and  $\eta^{cQ}$  and endogenous demand changes are allowed through  $\eta^{aY}$ ,  $\eta^{aP}$ , and endogenous changes in demand elasticity through  $D$ ), and obtain from (A13) and (A14) respectively,

$$(A15) \quad \Delta \frac{dP}{d\bar{a}} \frac{\alpha}{P} = \eta^{c^q} + \eta^{c^Y} - D$$

$$(A16) \quad \Delta \frac{dY}{d\bar{a}} \frac{\alpha}{Y} = 1 - \eta^{c^P}$$

It is reasonable to take  $\eta^{c^Y} \geq 0$  (i.e. an increase in aggregate output does not decrease costs). For the case of perfect competition,  $\eta^{c^q} > 0$ ,  $D = 0$  (as demand elasticity always equals minus infinity). Then, if nominal costs respond fully to prices such that  $\eta^{c^P}$

$= 1$ , we always have  $\frac{dY}{d\bar{a}} = 0$  and  $\frac{dP}{d\bar{a}} \frac{\alpha}{P} = \frac{1}{(1 - \eta^{c^P})} > 1$ . This greater than

proportionate effect of  $\bar{a}$  on  $P$  may appear surprising but is explained by the further

endogenous increase in  $\mathbf{a}$  as  $P$  increases with  $\bar{a}$ . This is the price-multiplier effect,

similar to the income-multiplier effect. An increase in  $\epsilon^a$  (say money supply) increases  $\mathbf{a}$  by  $x\%$  (this is the initial exogenous increase) at existing income and price levels. In the case of perfect competition, this leads to an  $x\%$  increase in prices with no effect on output. As  $\eta^{c^P} > 0$ , this increases aggregate demand further even if  $\epsilon^a$  does not change further. If  $\eta^{c^P} = 1/3$ , the final equilibrium will involve an increase in prices by  $1.5x\%$ , the price-multiplier

being  $\frac{1}{(1 - \eta^{c^P})}$ .

With non-perfect competition, it is still possible that  $\eta^{c^p} = 1$ ,  $\eta^{c^q} + \eta^{c^r} \cdot D \leq 0$ . Then, we still have a unique equilibrium and the neutrality of money  $\frac{dY}{d\bar{\alpha}} = 0$ . However, it is then possible for  $\eta^{c^q} + \eta^{c^r} \cdot D \leq 0$ , leading to the case of a continuum of **equilibria** and that of a **cumulative** effect of nominal demand on real output.

## Appendix B

### The Influence of Confucianism on Economic Development<sup>7</sup>

In **this** appendix, it is argued that Confucianism has important elements that impede the origin and development of a market economy; however, given a market system, there are elements in Confucianism that contribute to the growth of the economy.

A most important **unfavourable** factor of Confucianism in this respect is the use of the same principles for managing a family to the management of the whole country. A most important tenet of Confucianism is “Train oneself: bring the whole family’ to the same standard; rule the state; pacify the whole world”. The same principles are **regarded as** applicable in all these different spheres. Thus, “If one knows how to train oneself, one knows how to rule others; if one knows how to rule others, one knows how **to** rule the state and **the** whole world” (*Zhong Yung* ( 中庸 ), Ch.20).

However, there are important reasons making the management of a family and that of a country different. First, due to blood relationships, members of the same family have biologically innate tendencies to take account of the interests of other members of the family. (Consult the literature on kin **selection**; e.g. Wilson 1975.) Secondly, due to love relationships or simply because of living together, the **well-being** of a family member directly affects other members. Thirdly, the number of people in a family is much smaller than that in a country. Even if the pure principle of communism is used in a family of four, one still gets 25% of one’s contribution. The small number of members also makes agreement through direct interaction much more feasible. Due to these reasons, the **principle** of market exchange of equivalent values is not insisted upon within a family and much more reliance is placed on

love, sense of duty and responsibility, and other non-market principles.

In contrast, for dealings between different families in a country, much less reliance can be placed on self-imposed **restrictions** based on duty and responsibility. Rather, **complex regulations** for the **rule** of law and order have to be in **place** and **enforced**. This was largely **neglected by Confucianists though** emphasised by the Legalists. The **Confucianists**, by advocating the use of “Li” 禮 (ritual) and “Yi” 義 (justice) to rule the country, Confucianism might have impeded **the** development of a system conducive to the emergence and development of a market **economy**.

Apart from not distinguishing principles applicable within a family and those between families within a country, Confucianism also contains some related elements inimical to the emergence of a market economy. First, Confucianism **emphasises** justice and downgrades **material** benefits (“Li” 利, fourth tone). For example, “Gentlemen are only concerned with justice; why bother about **[material]** benefits?” Secondly, Confucianism downgrades agriculture, commerce, and industry. In **particular**, traders are relegated to the lowest position in society. Thirdly, Confucianism discourages human wants beyond basic needs. This, together with the downgrading of commerce and material benefits, tend to retard the emergence of a market economy. People of intelligence and learning were discouraged **from** engaging in **money-making** activities. However, given a market economy, the discouragement of excessive consumption raises the saving ratio and thus may actually be beneficial to growth.

In fact, given the operation of a market economy, Confucianism **also** contains other elements beneficial to growth. First, the Confucian teaching of “Li” (禮) (ritual), while

probably inimical to **the emergence of the market economic system based on the rule of law**, also helps to maintain social order **for** any given economic/political system, and **thus** is conducive to economic production. Secondly, the emphasis on justice and downgrading of material benefits while discouraging people from undertaking purely economic activities, **especially** commerce, also has the effect of helping to maintain commercial ethics at low transaction costs. Thirdly, the **Confucianist** emphasis on the concern for the welfare of one's progeny serves to lengthen one's time horizon and lower the discount rate. This has the effect of increasing the rate of accumulation. **Fourthly**, the spirit of diligence and thriftiness characteristic especially of neo-Confucianism (Yu 1986, p.20) is **also** obviously beneficial to economic growth.

Those elements in Confucianism that tend to impede the emergence of a market economic system may partly explain the failure of China to industrialise ahead of Europe. On the other hand, those elements favourable to economic growth given the operation of the market economy may help explain the high rates of growth in Japan and the Four Little Dragons after the introduction of the market system either through internal development (such as the Japanese Meiji Reform) or through external forces (such as the Alliance occupation in post-war Japan and the British occupation in Hong Kong and Singapore). Now, with its market economy basically in place, mainland China may grow at a fast rate partly **due to the** Confucianism factor.

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## Notes

- \* I am grateful to Christopher Clague for commenting on the first draft.

It may appear that the efficiency gain of adjustment at the firm level is measured by  $ege'$  which, after multiplied by the number of firms, is still less than the efficiency gain of  $EHE'$  at the industry level, an inconsistency. However, the efficiency gain at the firm level is measured by  $ege'$  only if we are comparing the case where all firms adjust with the case where only one firm fails to adjust. If we compare the case where all firms adjust and the case where all firms do not adjust, then the efficiency gain at the firm level would be measured by  $ehe'$  which, when multiplied by the number of firms, equals  $EHE'$ . This latter comparison is the right one to get the efficiency gain at the industry level.

2. Though published in 1987, it is a paper for a conference held in late 1985.
3. Publications intended for a wider readership than local Hong Kong people remain "pure".
4. Even if we take account of some inaccuracy in the statistics and the problem and suppressed inflation, inflation had not been significant in China for that period.
5. See Qian and Xu (1993) for a much more elaborate discussion covering many other insightful aspects.
6. However, some of the advantages of China should not be overemphasized. For example, while China certainly has benefited from foreign investment especially from Hong Kong, its stock of foreign direct investment to GDP ratio (2.7% in 1988) is low in comparison to many countries, not to mention the massive figure of 91.7% for Singapore.
7. This appendix is based on Wang & Ng (1994).